

Rapid Detection of the Varicella Zoster Virus

Executive Summary

By

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1. Technology Description- Researchers discovered that when the Varicella Zoster Virus (VZV) reactivates from latency in the body, the virus is consistently present in saliva before the appearance of skin lesions. A small saliva sample is mixed with a specialized reagent in a test kit. If the virus is present in the saliva sample, the mixture turns a red color. The sensitivity and specificity emanates from an antibody-antigen reaction. This technology is a rapid, non-invasive, point-of-care testing kit for detecting the virus from a saliva sample. The device is easy to use and can be used in clinics and in remote locations to quickly detect VZV and begin treatment with antiviral drugs.

2. Market Opportunity- RST Bioscience will be the first and only company to market a rapid, same day test kit for the detection of VZV in saliva. The RST detection test kit will have several advantages over existing, competitive technology. The test kit is self contained and laboratory equipment is not required for analysis of the sample. Only a single saliva sample is required to be taken instead of blood or cerebral spinal fluid. The test kit is portable, sterile and disposable after use. RST detection test kits require no electrical power or expensive storage equipment and can be used in remote locations.

3. Market Analysis- According to the CDC, it is estimated that 1 million cases of shingles occur each year in the U.S. with more than half over the age of sixty. There is a high demand for rapid diagnostics by the public. The point-of-care testing (POCT) market is growing faster than other segments of in vitro diagnostics. According to a July 2007 Intelab Corporation industry report the overall market for POCT was forecast to increase from \$10.3 billion in 2005 to \$18.7 billion by 2011. The market value of this test kit has not been determined.

4. Competition- The VZV vaccine prevents 50% of cases and reduces neuralgia by 66%. The most popular test detects VZV-specific IgM antibody in blood. Other tests include running a sample in a polymerase chain reaction analyzer, enzyme immunoassay, latex agglutination, indirect fluorescent antibody and fluorescent antibody to membrane antigen assay. These existing tests require laboratory analysis by trained personnel, expensive equipment, invasive procedures and a longer period of time to obtain test results.